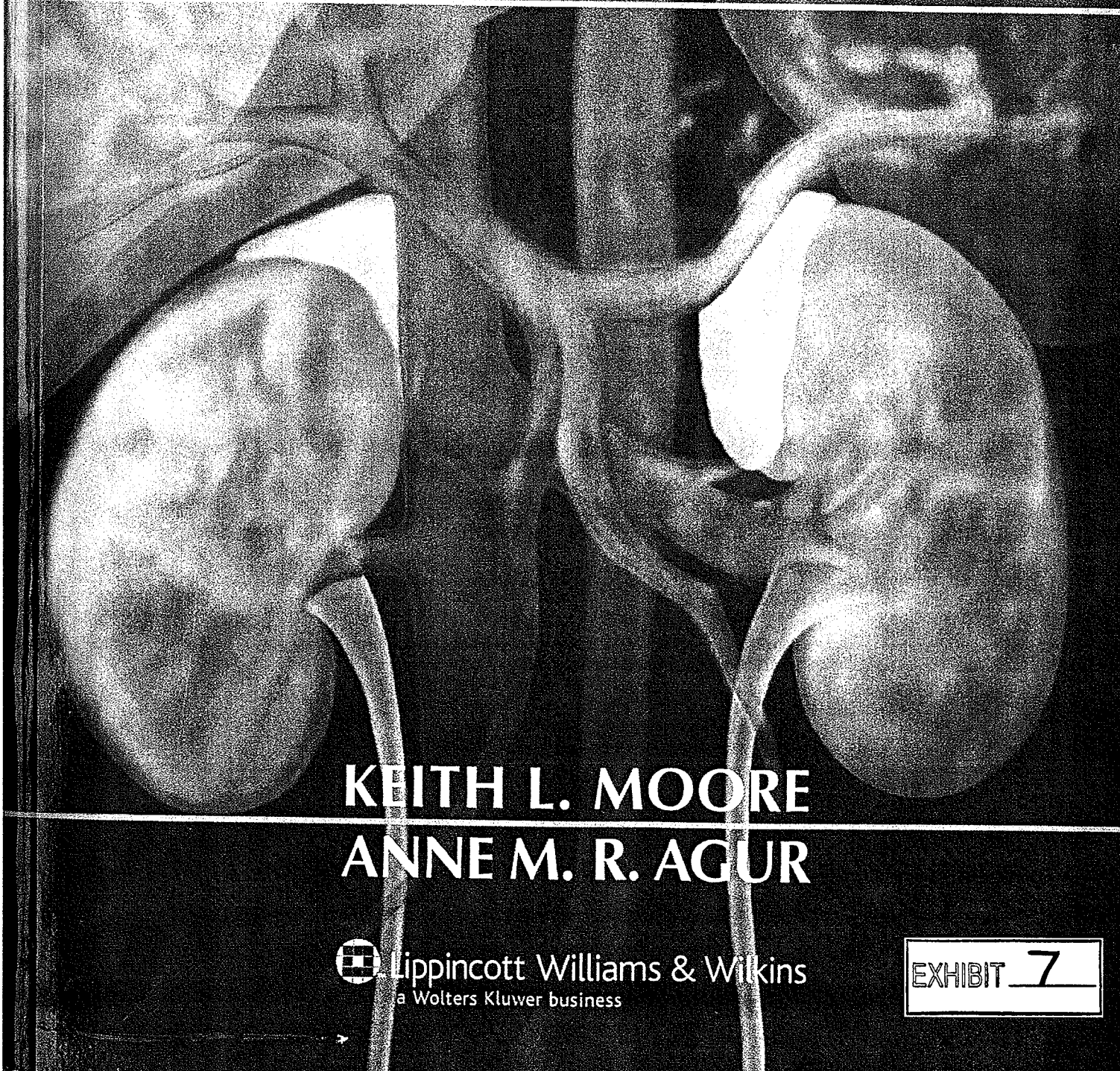


Point

Essential CLINICAL ANATOMY

THIRD EDITION



KEITH L. MOORE
ANNE M. R. AGUR



Lippincott Williams & Wilkins
a Wolters Kluwer business

EXHIBIT 7

Acquisitions Editor: Crystal Taylor
Developmental Editor: Kathleen H. Scogna
Editorial Assistant: Ariel Winter
Marketing Manager: Valerie Shannahan
Production Editor: Paula C. Williams
Art Director: Doug Smock
Cover design by Valerie Oxorn and Doug Smock
Compositor: Maryland Composition, Inc.
Printer: R. R. Donnelley & Sons - Willard

Copyright © 2007 Lippincott Williams & Wilkins

351 West Camden Street
Baltimore, MD 21201

530 Walnut Street
Philadelphia, PA 19106

All rights reserved. This book is protected by copyright. No part of this book may be reproduced in any form or by any means, including photocopying, or utilized by any information storage and retrieval system without written permission from the copyright owner.

The publisher is not responsible (as a matter of product liability, negligence, or otherwise) for any injury resulting from any material contained herein. This publication contains information relating to general principles of medical care that should not be construed as specific instructions for individual patients. Manufacturers' product information and package inserts should be reviewed for current information, including contraindications, dosages, and precautions.

Printed in the United States of America

First Edition, 1995
Second Edition, 2002

Library of Congress Cataloging-in-Publication Data

Moore, Keith L.

Essential clinical anatomy / Keith L. Moore, Anne M. R. Agur ; in collaboration with, and with content provided by, Arthur F. Dalley II ; with the expertise of medical illustrator Valerie Oxorn and the developmental assistance of Marion E. Moore. — 3rd ed.
p. ; cm.

Includes bibliographical references and index.

ISBN 13: 978-0-7817-6274-8

ISBN 0-7817-6274-X (alk. paper)

1. Human anatomy. 2. Human anatomy--Atlases. I. Agur, A. M. R. II. Title.

[DNLN: 1. Anatomy--Handbooks. QS 39 M822e 2007]

QM23.2.M673 2007

611—dc22

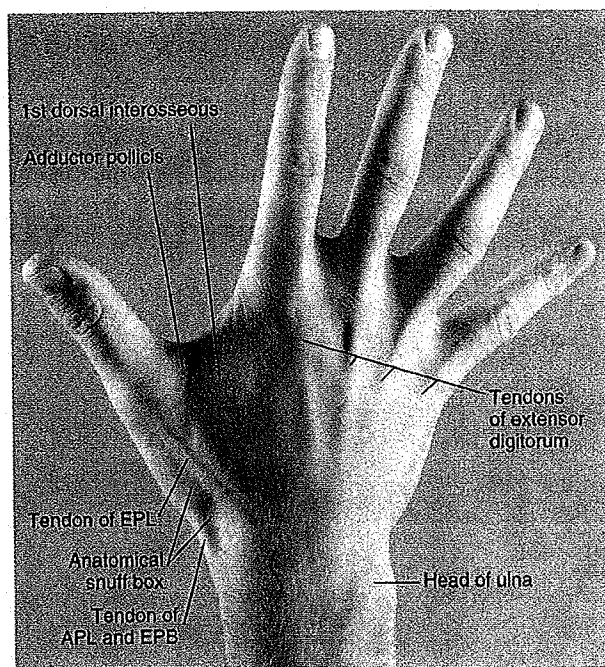
2006003452

The publishers have made every effort to trace the copyright holders for borrowed material. If they have inadvertently overlooked any, they will be pleased to make the necessary arrangements at the first opportunity.

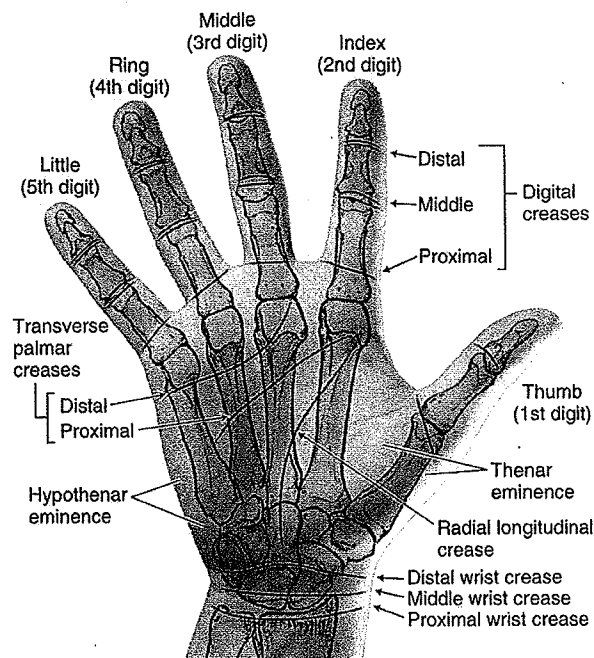
To purchase additional copies of this book, call our customer service department at (800) 638-3030 or fax orders to (301) 223-2320. International customers should call (301) 223-2300.

Visit Lippincott Williams & Wilkins on the Internet: <http://www.LWW.com>. Lippincott Williams & Wilkins customer service representatives are available from 8:30 am to 6:00 pm, EST.

07 08 09 10
3 4 5 6 7 8 9 10



C Posterior view



D Anterior view

Figure SA6.4. (Continued)

FCU tendon serves as a guide to the ulnar nerve and artery. The tendons of the FDS can be palpated as the digits are alternately flexed and extended.

The tendons of the APL and EPB indicate the lateral (anterior) boundary of the anatomical snuff box, and the tendon of the EPL indicates the medial (posterior) boundary of the box (Fig. SA6.4C). The radial artery crosses the floor of the snuff box, where its pulsations may be felt. The scaphoid and, less distinctly, the trapezium are palpable in the floor of the snuff box.

If the dorsum of the hand is examined with the wrist extended against resistance and the digits abducted, the tendons of the extensor digitorum to the fingers stand out (Fig. SA6.4C). These tendons are not visible far beyond the knuckles because they flatten here to form the extensor expansions of the fingers. Under the loose subcutaneous tissue and extensor tendons, the metacarpals can be palpated. The knuckles that become visible when a fist is made are produced by the heads of the metacarpals.

The palmar skin presents several more or less constant flexion creases where the skin is firmly bound to the deep fascia (Fig. SA6.4D):

- **Wrist creases:** proximal, middle, distal. The *distal wrist crease* indicates the proximal border of the flexor retinaculum.
- **Palmar creases:** radial longitudinal crease (the life line of palmistry), proximal and distal transverse palmar creases:
- **Transverse digital flexion creases:** The **proximal digital crease** is located at the root of the digit, approximately 2 cm distal to the metacarpophalangeal joint. The proximal digital crease of the thumb crosses obliquely, proximal to the 1st metacarpophalangeal joint. The **middle digital crease** lies over the proximal interphalangeal joint, and the **distal digital crease** lies proximal to the distal interphalangeal joint. The thumb, having two phalanges, has only two flexion creases.



US005806091A

United States Patent [19]

McHugh

[11] Patent Number: **5,806,091**
 [45] Date of Patent: **Sep. 15, 1998**

[54] **HAND GRIP AID**

[76] Inventor: **Mark Lawrence McHugh**, 665
 Fairway Cir., Hillsborough, Calif. 94010

[21] Appl. No.: **749,085**

[22] Filed: **Nov. 14, 1996**

Related U.S. Application Data

[63] Continuation of Ser. No. 503,300, Jul. 17, 1995, abandoned.

[51] Int. Cl.⁶ **A41D 13/08**

[52] U.S. Cl. **2/20; 2/161.1; 273/26 C;**
 473/212; 482/49

[58] Field of Search 2/16, 20, 21, 161.1;
 273/75, 670 B, 26 C; 74/551.9; 473/59,
 61, 201, 212; 482/49; 441/69

[56] **References Cited****U.S. PATENT DOCUMENTS**

D. 387,826 12/1997 Smallwood et al. D21/198
 1,479,771 1/1924 Campbell .
 1,607,022 11/1926 Swinburne 119/14.22
 2,411,880 12/1946 Jackson 2/20
 3,398,951 8/1968 Disko 473/61
 3,557,776 1/1971 Boots et al. 128/897
 3,606,614 9/1971 Dimitroff .
 4,420,843 12/1983 Genzling .
 4,461,043 7/1984 Lomedico 2/21
 4,617,684 10/1986 Green et al. .
 4,748,690 6/1988 Webster .

4,892,315 1/1990 Iorlano 2/20 X
 4,934,024 6/1990 Sexton, I 273/75 X
 4,977,621 12/1990 Richard .
 5,069,454 12/1991 Frost 2/20 X
 5,155,878 10/1992 Dellis 74/551.9 X
 5,180,165 1/1993 Frost 2/20 X
 5,214,799 6/1993 Fabry .
 5,218,719 6/1993 Johnson 2/20 X
 5,285,529 2/1994 Arena .
 5,322,286 6/1994 Frost 2/20 X
 5,471,682 12/1995 Robins et al. 2/161.1

Primary Examiner—Michael A. Neas

Attorney, Agent, or Firm—Flehr Hobbach Test Albritton &
 Herbert LLP

[57]

ABSTRACT

A hand grip fits in the user's hand near where the palm joins the fingers and provides a support to distribute the force from a hand-held device onto the entire hand. In one embodiment, the hand grip includes an elongated resilient member that has an undulated side to accommodate the user's fingers. The member is placed adjacent to the user's fingers and superficial transverse metacarpal ligament. The member prevents the ligament, along with associated muscle and skin tissue, from being forced over the fingers when the user grasps a handle. The member can be constructed of plastic, rubber, or other material that provides flexibility and easily accommodates the user's fingers. The member may be held in place by an elastic band that is worn around a user's finger.

26 Claims, 3 Drawing Sheets

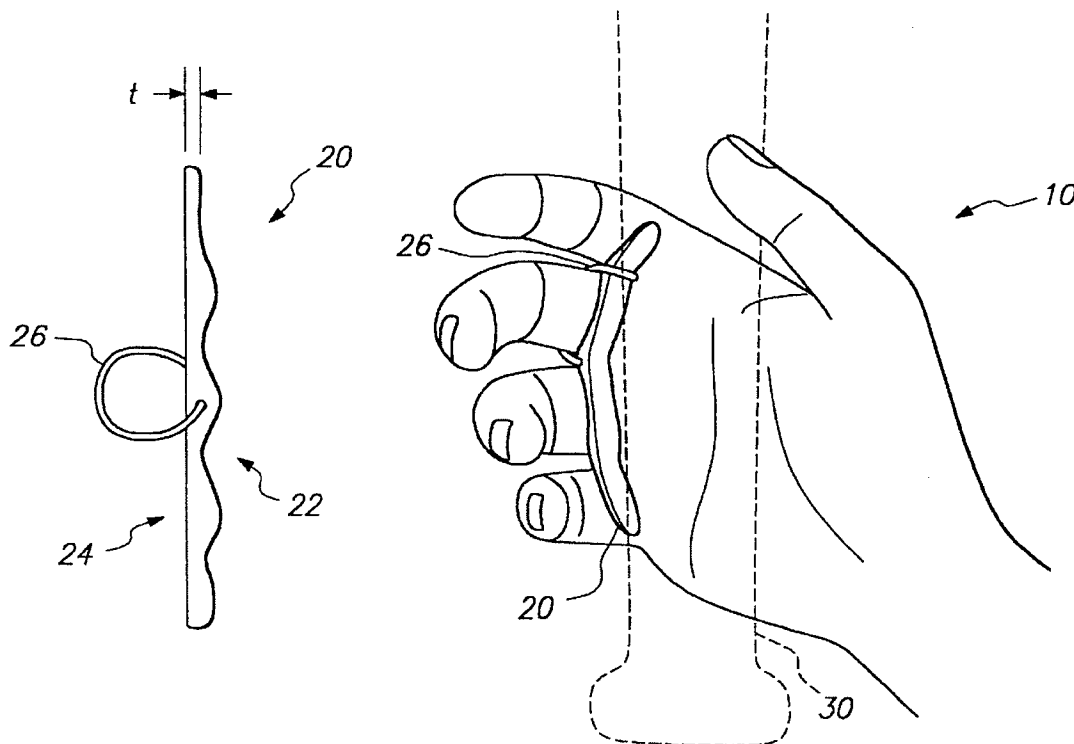


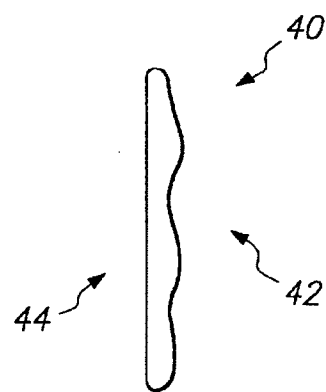
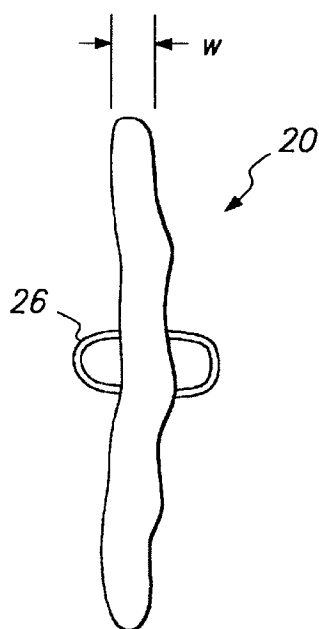
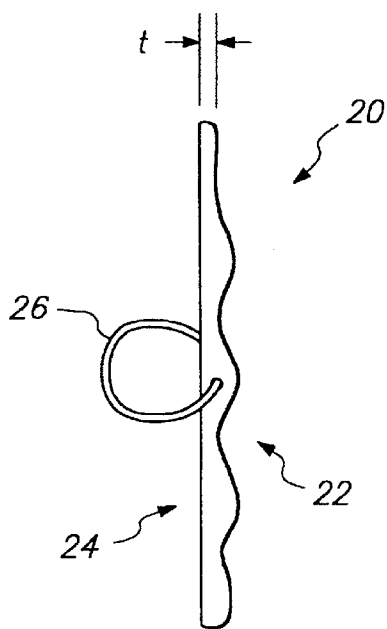
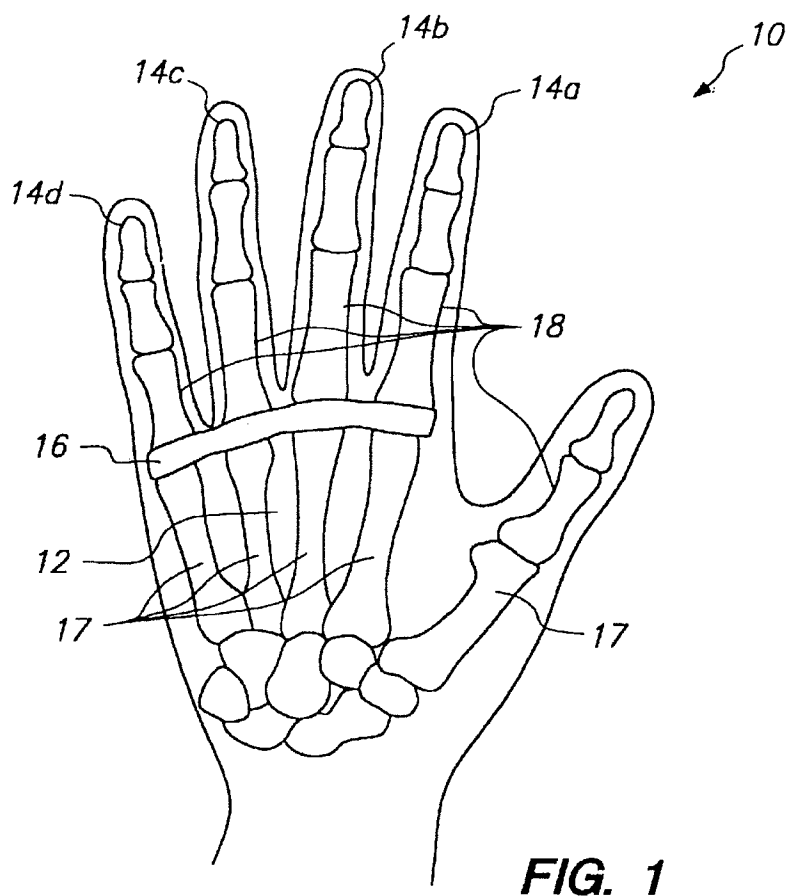
EXHIBIT 8

U.S. Patent

Sep. 15, 1998

Sheet 1 of 3

5,806,091

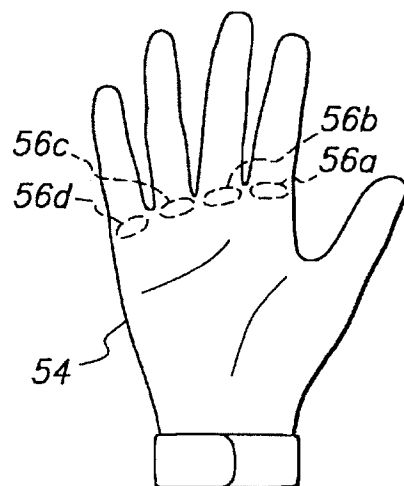
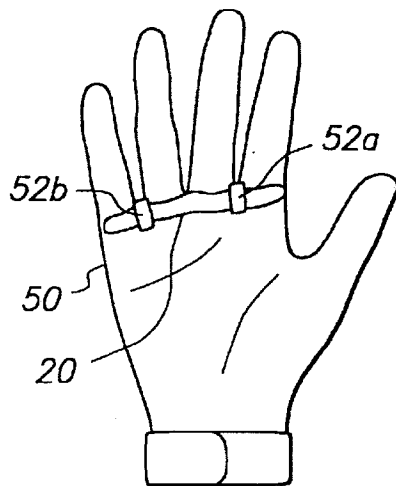
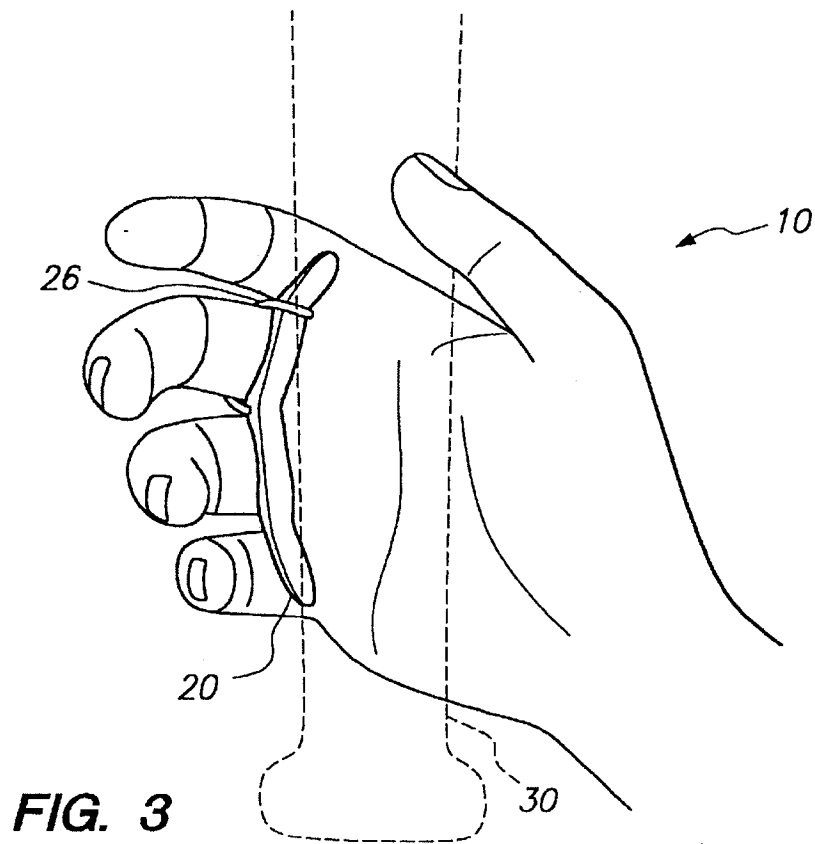


U.S. Patent

Sep. 15, 1998

Sheet 2 of 3

5,806,091



U.S. Patent

Sep. 15, 1998

Sheet 3 of 3

5,806,091

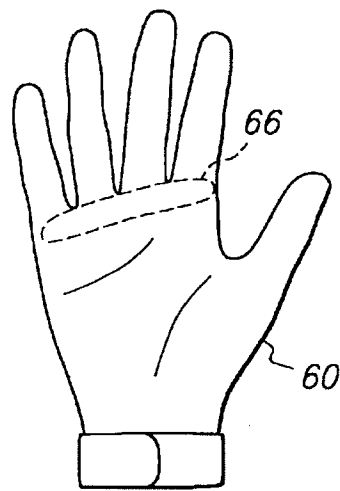


FIG. 6

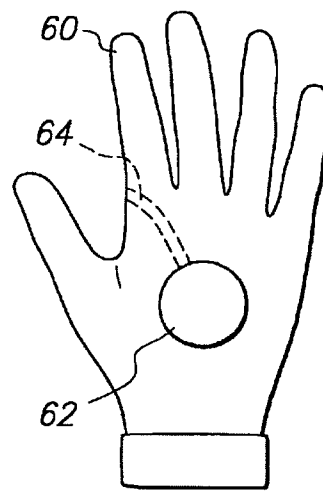


FIG. 7

5,806,091

1

HAND GRIP AID

This is a continuation of application Ser. No. 08/503,300 filed Jul. 17, 1995, now abandoned.

FIELD

The present invention relates to a hand grip aid for use with sports equipment, exercise equipment, manual work equipment, or any other equipment that has a handle.

BACKGROUND

Hand grip aids help to prevent hand damage and discomfort when a person uses equipment that has a handle. The benefits of hand grip aids are amplified in those situations where repetitive use can cause damage or extreme discomfort including blisters and calluses. One motivation for the invention is based on experiences with sports equipment such as baseball bats, where batters are required to practice for extended periods of time while firmly gripping a baseball bat.

Many devices on the market are directed at preventing damage to a person's hand, and these devices range from thick gloves to pads that protect a person's palm. These gloves and pads serve the desire to protect the hand, but also reduce the tactile feel that is required in many sports and other activities. For example, a thick glove may protect the skin on the hand, but will reduce the ability of the user to grip a handle. As another example, a thick palm pad will reduce shock vibrations, but may cause a handle to feel overly large and reduce the ability of the user to grip the handle.

What is lacking in these devices is a mechanism to both distribute the force of the handle against the hand and comfortably accommodate the user's fingers in a way that protects the user's hands from damage while still providing good tactile feel of the handle.

SUMMARY

The present invention relates to a hand grip aid for use with sports equipment, exercise equipment, manual work equipment, or any other equipment that has a handle.

A hand grip fits in the user's hand near where the palm joins the fingers and provides a support to distribute the force from a hand-held device onto the entire hand. In one embodiment, the hand grip includes an elongated resilient member that has an undulated side to accommodate the user's fingers. The member is placed adjacent to the user's fingers and superficial transverse metacarpal ligament. The member prevents the ligament, along with associated muscle and skin tissue, from being forced over the fingers when the user grasps a handle. The member can be constructed of plastic, rubber, or other material that provides flexibility and easily accommodates the user's fingers. The member may be held in place by an elastic band that is worn around a user's finger.

Advantages of the invention include reduced hand damage and improved comfort while providing a good tactile feel and a strong grip. Another advantage of the invention is that it can be worn with a glove or without a glove and still achieve the same beneficial results or built directly into a glove or part of a glove for ease of use and convenience.

BRIEF DESCRIPTION OF THE DRAWINGS

Additional advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings, in which:

2

FIG. 1 is a palm view of a human hand showing the metacarpal bones, the phalanges, and the superficial transverse metacarpal ligament;

FIGS. 2A-B depict a hand grip for four fingers according to an embodiment of the invention;

FIG. 3 depicts the hand grip of FIG. 2 being held by a user;

FIG. 4 depicts a hand grip for three fingers according to another embodiment of the invention;

FIGS. 5A-B depict a hand grip for a glove according to another embodiment of the invention;

FIG. 6 depicts a palm view of an inflatable hand grip incorporated in a glove according to another embodiment of the invention; and

FIGS. 7 depicts the back side of the hand grip and glove of FIG. 6.

DETAILED DESCRIPTION

The present invention relates to a hand grip for use with sports equipment, exercise equipment, manual work equipment, or any other equipment that has a handle.

Exemplary embodiments are described herein with reference to specific configurations. Those skilled in the art will appreciate that various changes and modifications can be made to the exemplary embodiments while remaining within the scope of the present invention.

A first embodiment is described with reference to FIGS. 1-2. FIG. 1 is an illustration of a human hand 10. The hand has a palm region 12 and four fingers 14a-d. The hand 10 includes metacarpal bones (palm bones) 17 and the proximal phalanges (base finger bones) 18. A superficial transverse metacarpal ligament 16 serves to connect the metacarpal bones 17 near where the proximal phalanges 18 couple with the metacarpal bones 17. Ligament 16 serves to hold the metacarpal bones together and provides a base of support for the phalanges, along with cover tissue including muscle, nerves and skin. While ligament 16 and its cover material serves the valuable purpose of holding the hand together, the skin above the ligament 16 often becomes blistered or callused with repetitive use of hand-held equipment.

FIGS. 2A-B depict an embodiment of a grip 20 designed to fit adjacent to the ligament 16 and adjacent to the proximal phalanges 18 (the base sections of finger bones). Note that the grip 20 has one side with an undulating surface 22 and one side with a substantially planar surface 24. The undulating surface 22 is designed to accommodate the user's fingers and to fit comfortably in the user's hand 10 adjacent to ligament 16 and the base of fingers 14. In FIG. 2A, there are three undulations to accommodate the spaces between four fingers. The surface 24 is designed to contact a handle. While this embodiment shows the surface 24 as substantially planar, a semicurved surface is envisioned that may accommodate a round handle, or other shaped handle. A flexible elastic band retainer 26 is provided to attach to the user's finger so that the grip 20 will remain in the proper position. Although an elastic band is shown, any similar type retainer can be used to attach to the user, such as a velcro strap or a non-elastic strap. A T-shaped brace retainer is also envisioned where the base of the T is attached to the grip 20 and the brace fits between the middle finger and ring finger. Moreover, if desired, grip 20 can be made without band 26.

Any type of resilient material, such as plastic or rubber, can be used for the invention. The range of thickness varies due to the user's hand size and the desired feel of the handle. In one aspect of the invention, the grip 20 is pre-molded

5,806,091

3

to fit user's hand sizes from small to large, and the user can use it immediately after selecting a desired size such as one having a total length approximately equal to the width of four fingers of the user's hand. For example, the grip thickness (dimension *t*) can be made as thin as 1 mm to greater than 10 mm, and the grip can be made to any total length that is consistent with human hands. Also, for example, the grip width (dimension *w*) can be made as narrow as 4 mm to wider than 15 mm with a preferred range of 6–10 mm. In this aspect of the invention, as shown in FIGS. 2A–B, grip 20 is an elongated member that has a total length greater than three times an average thickness and greater than three times an average width.

FIG. 3 depicts how a user positions the grip 20 in his hand. Note that the grip 20 is placed on the fingers adjacent to the ligament 18 so that when the user grabs a handle 30 (of a baseball bat) the grip 20 is positioned between the hand and the handle 30.

One reason the grip 20 is successful is that it fills an unused portion or gap, of the hand 10 where the ligament 16 and associated tissue would otherwise cause the skin to overlap over the base of the fingers 14a–d. As shown in FIG. 3, as the hand 10 grasps a handle 30 with the grip 20 in place, the grip 20 distributes the force of the handle 30 over the entire contact surface without an overlap of skin. Most users feel only a slight added pressure and improved comfort. Moreover, users have good tactile feel of the handle.

Tests so far conclude that a thin grip is very effective when the user wishes little or no sensation that the grip is in place, other than the relief from blisters of calluses along the skin. Moreover, the relief from pain and discomfort has been noted by users immediately after using the grip 20 even when existing blisters and calluses caused discomfort before wearing grip 20.

A thick grip 20 has some benefits over the thin grip. Not only does the thick grip relieve the pain of blisters and calluses immediately, but the thicker grip also benefits the user with a sensation of a stronger, more secure and all-around tighter grip on the device. The added pressure of grip 20 develops the region adjacent to the ligament 16 into an additional contact area. This new contact area has been noticed by a sensation of added pressure at the base of the fingers, and on the back side of the fingers, which extends to a new muscle sensation through the wrist and up the forearm. Although the grip 20 may be thick, it does not create the feeling that the handle is larger, due to the strategic placement of grip 20 in the hand 10 adjacent to the ligament 16. This benefits many users who enjoy a more secure grip when the handle is made smaller with the result that the user feels like he has more control over the equipment.

Grip 20 may be used adhered to, attached to, or not attached to the user's hand. Grip 20 may also be used with a glove, if desired. For example, grip 20 can be placed between a glove and a handle to achieve the desired placement or inside the glove closer to the user's hand if desired. Grip 20 permits the user to concentrate more on the sport or work, and less on any discomfort previously felt without grip 20. Moreover, grip 20 permits the user to gain a tighter grip on the handle so that the user can better use the equipment and still maintain a good tactile feel of the handle.

In another aspect of the embodiment, when the grip 20 is made from a plastic that is capable of being molded, the user can custom mold the grip 20. The user can place the grip 20 in a pot of boiling water for 10–15 seconds and then remove the grip 20 and place it in his hand. For this purpose

4

the grip 20 should be made from a material having a softening point at above 40° C., preferably about 50° C. For example, a plastic type material has been used successfully to mold to user's hands without heat discomfort since the device has a softening point of approximately 50° C. This material is similar to that which is used for mouthpieces for sports such as football and boxing.

Alternatively, for custom molding, the material can be a substance that takes shape shortly after being mixed with another substance. For example, known puttytype substances that cure within minutes of mixing can be rolled into a cylinder and then pressed into the user's base finger area while gripping a handle. The resulting member will have undulations on one side and be customized for the user's hand. Putties for this purpose include those such as vinyl polysiloxane silicon rubber that is a double mix, and vinyl polysiloxane silicon rubber that is putty/reline. These substances are available from suppliers such as 3M.

Another embodiment is depicted in FIG. 4, where grip 40 is shorter than grip 20 shown in FIGS. 2A–B. In some cases, the user may wish a grip to fit next to one, two, or three fingers rather than four. In these cases, grip 40 is customized to fill that space by having one, two, or three undulations on one side 42. This embodiment may be useful where a handle grip area is particularly small and where only a small grip 30 can be accommodated. An example is a golf club, where only three fingers may grip the handle such as in an interlocking grip. This embodiment can also have the aspect of the prior embodiment where the grip 40 can be custom molded by heating and fitting.

Another embodiment is depicted in FIG. 5A, where a glove 50 includes an attachment 52 for a hand grip 20. Glove 50 is constructed so that material is formed over the gap near the base of fingers 14. This material includes attachments 52a and 52b to hold grip 20 in place over the base of the fingers. In FIG. 5, attachments 52a and 52b are elastic straps that retain the grip 20. Alternatively, an attachment can be a single strap, a long thin pocket, or other similar retainer.

FIG. 5B shows a glove 54 where grip 20 is broken up into four small grips 56a–d that provide support to one finger each. This is accomplished by incorporating four grips (as small elongated members 56a–d) into each of the four fingers of a glove near the base of the fingers, as shown.

Another embodiment is depicted in FIGS. 6 and 7, where a glove 60 includes an inflatable pouch that fills the region adjacent to the user's ligament 16 and the base of the fingers 14a–d. This embodiment includes a pump 62, a tube 64 and an inflatable member 66. A feature of this embodiment is that inflatable member 66 is positioned similar to that described above with respect to grip 20 in order to fill the unused portion of the hand where the ligament 16 and associated tissue would otherwise cause the skin to overlap. Pump 62 is positioned on the back of the user's hand where the user can exert a force against the pump to inject air into the tube 64. Tube 64 delivers air to inflatable member 66 and causes member 66 to inflate to provide support to the region adjacent to the base of fingers 14. To relieve pressure in the inflatable member 66, the user squeezes the pump base to release pressure from the inflatable member 66. While the description is directed to inflating member 66 with air, any substance including gel or other fluid can be used to fill member 66.

Advantages of the invention include reduced hand damage and improved comfort while providing a good tactile feel and a strong grip. Another advantage of the invention is that it can be worn with a glove or without a glove and still

5,806,091

5

achieve the same beneficial results or built directly into a glove or part of a glove for ease of use and convenience.

ALTERNATIVE EMBODIMENTS

Having disclosed exemplary embodiments and the best mode, modifications and variations may be made to the disclosed embodiments while remaining within the scope of the present invention as defined by the following claims.

What is claimed is:

1. A hand grip configured to fit in a user's hand and for use with a handled instrument, comprising:

an elongated resilient member having an average width of approximately 4–15 mm and an average thickness of approximately 1–10 mm and configured to fit at a base of the user's fingers in a gap between a palm of the user's hand and the base of the user's fingers; and

a retainer connected to the member and configured to extend around to the backside of at least one of the user's fingers to retain the member in the user's hand adjacent to the base of the user's fingers.

2. A hand grip as in claim 1, wherein:

the member has a plurality of undulations designed to accommodate the user's fingers and a plurality of protuberances designed to fit between the user's fingers.

3. A hand grip as in claim 1, wherein:

the member has a plurality of undulations designed to accommodate less than four of the user's fingers and at least one protuberance designed to fit between the user's fingers.

4. A hand grip as in claim 1, wherein:

the retainer is an elastic strap configured to secure around at least one of the user's fingers.

5. A hand grip as in claim 1, wherein:

the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the elongated member in a position adjacent to the base of the user's fingers.

6. A hand grip as in claim 3, wherein:

the retainer is an elastic strap configured to secure around at least one of the user's fingers.

7. A hand grip as in claim 2, wherein:

the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the elongated member in a position adjacent to the base of the user's fingers.

8. A hand grip as in claim 1, wherein:

the elongated member is an inflatable member.

9. A hand grip as in claim 8, further comprising:

a pump coupled to the elongated member; and

wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

10. A hand grip as in claim 5, wherein:

the elongated member is an inflatable member.

11. A hand grip as in claim 10, further comprising:

a pump coupled to the elongated member; and

wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

12. A hand grip as in claim 1, wherein:

6

the elongated member includes a plurality of sub-members each configured to fit adjacent to the base of the user's fingers.

13. A hand grip as in claim 12, wherein:

the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the elongated member in a position adjacent to the base of the user's fingers.

14. A hand grip as in claim 13, wherein:

the elongated member is an inflatable member.

15. A hand grip as in claim 14, further comprising:

a pump coupled to the elongated member; and

wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

16. An apparatus for use by a human hand to grip an object, the hand having a palm and a plurality of fingers with respective bases secured to the palm, comprising a thin elongated member made from a flexible material and having a total length greater than three times an average thickness and greater than three times an average width, the elongated member having a length sufficient to extend across the base of the fingers adjacent the palm and a plurality of longitudinally spaced-apart protuberances adapted to extend between the fingers, a curved surface extending between adjacent protuberances for forming a recess to receive the base of a finger and a retainer extending around to the backside of at least one of the fingers for removably securing the elongated member to the hand.

17. An apparatus as in claim 16 wherein the retainer for removably securing includes an elastic band having first and second ends secured to the elongated member.

18. An apparatus as in claim 16 wherein the retainer for removably securing includes a T-shaped retainer having a part thereof secured to the elongated member.

19. An apparatus as in claim 16 wherein the elongated member has a plurality of at least three longitudinally spaced-apart protuberances.

20. An apparatus as in claim 16 wherein the elongated member has an average width of approximately 4–15 mm and an average thickness of approximately 1–10 mm.

21. An apparatus as in claim 17 wherein the elongated member has an average width of approximately 4–15 mm and an average thickness of approximately 1–10 mm.

22. An apparatus as in claim 16 wherein the retainer for removably securing includes a glove including an attachment to retain the elongated member in a position adjacent to the user's fingers.

23. An apparatus as in claim 16 wherein the elongated member is an inflatable member.

24. An apparatus as in claim 23 further comprising a pump coupled to the elongated member and wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

25. An apparatus as in claim 22 wherein the elongated member is an inflatable member.

26. An apparatus as in claim 25 further comprising a pump coupled to the elongated member and wherein the elongated member is responsive to tie pump and is configured to inflate upon activation of the pump.

* * * * *

AUG 19 '97 02:41PM FLEHR HOHBACH TEST

P.1/5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

McHugh

Serial No.: 08/749,085

Filed: NOVEMBER 14, 1996

Title: CUSTOMIZABLE HAND GRIP

Art Unit: 3408

Examiner: P. Lewis

CERTIFICATE OF FACSIMILE TRANSMISSION
I hereby certify that this correspondence is being facsimile
transmitted to the Assistant Commissioner for Patents, at fax
number (703) 308-7766 on August 19, 1997.
5 PAGES TOTAL

Signed DAVID ASHBY
David Ashby

FAX COPY RECEIVED

AUG 19 1997

GROUP 3400

TRANSMITTAL OF AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Enclosed is:

- (1) an Amendment After Final for the subject Patent Application.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, to Deposit Account No. 06-1300 (Order No. A-61195-1/TOH).

Respectfully submitted,
FLEHR, HOHBACH, TEST,
ALBRITTON & HERBERT

By:

DAVID ASHBY
David C. Ashby
Reg. No. 36,432

FLEHR, HOHBACH, TEST
ALBRITTON & HERBERT
Four Embarcadero Center; Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 494-8700

A-61195-1/TOH/DCA
Transmittal

EXHIBIT 9

AUG 19 '97 02:41PM FLEHR HOHBACH TEST

P.2/5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

McHugh

Serial No.: 08/749,085

Filed: NOVEMBER 14, 1996

Title: CUSTOMIZABLE HAND GRIP

Art Unit: 3408

Examiner: P. Lewis

FAX COPY RECEIVED

AUG 19 1997

GROUP 3400

AMENDMENT AFTER FINAL

AMENDMENT AFTER FINAL

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the Office Action mailed August 1, 1997, Applicant petitions for entry of the following Amendment.

IN THE CLAIMS

Please cancel claim 2.

Please amend claims 1, 39 and 40 as follows:

1. (Amended) A hand grip configured to fit in a user's hand and for use with handled equipment, comprising:

an elongated resilient member having an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm [a total length greater than three times an average thickness and greater than three times an average width] and configured to fit into a gap adjacent to a user's superficial transverse metacarpal ligament and adjacent to a user's finger to space skin from the user's palm from the user's fingers.

AUG 19 '97 02:41PM FLEHR HOHBACH TEST

P.3/5

39. (Amended) A hand grip configured to fit in a user's hand ^{in conjunction} ~~and for use with handled~~ equipment, comprising:

an elongated resilient member having an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm and configured to fit into a gap adjacent to a user's superficial transverse metacarpal ligament and adjacent to a user's finger.

40. (Amended) A hand grip configured to fit in a user's hand ~~and for use with handled~~ equipment, comprising:

an elongated resilient member ~~having an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm~~ and having undulations designed to accommodate the user's fingers and configured to fit into a gap adjacent to a user's superficial transverse metacarpal ligament and adjacent to a user's finger to space skin from the user's palm from the user's fingers; and

a retainer attached to said elongated member and configured to retain said elongated member in a user's hand.

REMARKS

In the Office Action mailed August 1, 1997, Claims 1-4, 21, 22, 39 and 40 were rejected under §102 as anticipated by Sexton '024.

Telephone Interview

On August 12, 1997 Examiner Lewis and David Ashby, Attorney for Applicant, discussed the pending claims and the rejection in a telephone interview. Mr. Ashby reiterated that the invention is for use with handled equipment, is a resilient member, and has dimensions different than those of Sexton '024. Mr. Ashby also reiterated that the claims are to be interpreted in view of the specification, which describes an invention considerably different than that of Sexton '024.

AUG 19 '97 02:42PM FLEHR HOHBACH TEST

P. 4/5

Examiner Lewis appeared to agree that these three differences, in combination, are not described by Sexton '024. Examiner Lewis indicated that amended independent claims reciting (1) a field of use limitation that the device is for use with handled equipment; (2) that the member is resilient; and (3) stating the dimensions as recited in the specification, would define patentable subject matter. Examiner Lewis agreed that the claims are to be interpreted in view of the specification and that the specification as a whole describes an invention different than that of Sexton '024.

Present Amendment

Therefore, Applicant here provides an Amendment consistent with the amended claim limitations discussed in the Telephone Interview. Applicant has amended the independent claims 1, 39 and 40 to recite that the hand grip is for use with handled equipment, that the grip is resilient and that the grip is defined within specific physical limitations described in the specification. Applicant submits that the presently amended claims satisfy the Examiner's concerns and define an invention patentable over the references.

Applicant further petitions for allowance of the non elected species claims since they depend from an allowable independent claim.

For these reasons, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of the claims and pass the case to issue.

AUG 19 '97 02:42PM FLEHR HOHBACH TEST

P.5/5

If this case is not allowed by reason of this amendment, Applicant requests that the Examiner telephone Applicant's Attorney at the telephone number below to discuss the matter.

Respectfully submitted,

By:

DAVID C. ASHBY
David C. Ashby
Reg. No. 36,432

FLEHR, HOHBACH, TEST,
ALBRITTON & HERBERT
Four Embarcadero Center; Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 494-8700

FAX COPY RECEIVED

AUG 19 1997

GROUP 3400



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re application of:

McHugh

Serial No.: 08/503,300

Filed: JULY 17, 1995

Title: CUSTOMIZABLE HAND GRIP

Art Unit: 3408

Examiner: P. Lewis

AMENDMENT

June 12, 1996

#1A
RC
7/8/96

AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the Office Action mailed March 13, 1996, Applicant provides the following response.

IN THE CLAIMS

Please cancel claims 9-20 in response to the restriction requirement.

Please amend claims 1 and 6-8 as follows:

1. (Amended) A hand grip configured to fit in a user's hand, comprising:
an elongated member having a length greater than two times a thickness and greater than two times a width and configured to fit adjacent to a [the] user's superficial transverse metacarpal ligament and adjacent to a user's finger.

6. (Amended) The hand grip of claim 1, wherein:
said member softens above approximately 40°C; and

A-61195/CMZ/DCA
Response to 3/13/96 Office Action

- 1 -

EXHIBIT 10

Sub 21
said member has a shape that is configured [designed] to be customizable by the user by heating said member and fitting said member to the user's hand.

AP
7. (Amended) The hand grip of claim 1, wherein:
said member softens above approximately 50°C; and
said member has a shape that is configured [designed] to be customizable by the user by heating said member and fitting said member to the user's hand.

Sub 3
8. (Amended) The hand grip of claim 1, further comprising:
a glove including an attachment to retain said elongated member in a position adjacent to the user's fingers.

Please add new claims 21-38 as follows:

AB
21. The hand grip of claim 1, further comprising:
a retainer attached to said elongated member and configured to retain said elongated member in a user's hand.

Sub 4
22. The hand grip of claim 3, further comprising:
a retainer attached to said elongated member and configured to retain said elongated member in a user's hand.

23. The hand grip of claim 1, wherein:
said elongated member is an inflatable member.

24. The hand grip of claim 23, further comprising:
a pump coupled to said inflatable member.

25. The hand grip of claim 24, wherein:

said inflatable member is responsive to said pump and inflates when a user operates said pump.

SB
AB
26. The hand grip of claim 8, wherein:
said elongated member is an inflatable member.

27. The hand grip of claim 26, further comprising:
a pump coupled to said inflatable member.

28. The hand grip of claim 27, wherein:
said inflatable member is responsive to said pump and inflates when a user operates said pump.

29. The hand grip of claim 1, wherein:
said elongated member includes a plurality of sub-members each configured to fit adjacent to the user's superficial transverse metacarpal ligament and adjacent to a user's finger.

SB
AB
30. The hand grip of claim 29, further comprising:
a glove including an attachment to retain said sub-members in a position adjacent to the user's fingers.

31. The hand grip of claim 30, wherein:
said sub-members are inflatable members.

32. The hand grip of claim 31, further comprising:
a pump coupled to said inflatable members.

33. The hand grip of claim 32, wherein:

said inflatable members are responsive to said pump and inflate when a user operates said pump.

AB 34. A hand grip configured to fit in a user's hand, comprising:
a plurality of members each configured to fit adjacent to a user's superficial transverse metacarpal ligament and adjacent to a user's finger.

35. The hand grip of claim 34, further comprising:
a glove including an attachment to retain said members in a position adjacent to the user's fingers.

36. The hand grip of claim 35, wherein:
said members are inflatable members.

37. The hand grip of claim 36, further comprising:
a pump coupled to said inflatable members.

38. The hand grip of claim 37, wherein:
said inflatable members are responsive to said pump and inflate when a user operates said pump.

REMARKS

In the Office Action mailed October 18, 1995, Claims 1-4, 6 and 7 were rejected. Claims 6 and 7 were rejected under 35 USC §112. Claims 1-4, 6 and 7 were rejected under §102(e) as anticipated by Frost '286. Claims 1-3, 6 and 7 were rejected under §102(e) as anticipated by Jackson '880.

Applicant respectfully traverses the rejections by amending the claims to overcome the §112 rejection and by pointing out claimed features that are not taught or suggested by the references.

§112

Applicant has amended claims 6 and 7 to recite that the "member has a shape that is configured to be customizable by the user by heating said member and fitting said member to the user's hand." The feature of the selected material is the claimed feature in claims 6 and 7 and the feature that the material is configured to be customizable by the user is also claimed. The claim is read with reference to the specification which outlines the feature of the material for this purpose (page 5 line 17 to page 6 line 2). Applicant submits that this change clarifies claims 6 and 7. Applicant requests that the Examiner reconsider and withdraw the §112 rejection of claims 6 and 7.

§102

Claims 1-4, 6 and 7 were rejected under §102(e) as anticipated by Frost '286. Claims 1-3, 6 and 7 were rejected under §102(e) as anticipated by Jackson '880.

A. Frost

Frost describes a hand accessory for swinging an implement handle. As can be seen by the figures and described in the specification, the Frost device is a substantial device that has very bulky dimensions. For example, looking to Figures 4 and 5, the dimension of the thickness of the device is nearly the same as the length of the device. For this reason,

Applicant submits that the Frost device is not an elongated device, but rather a device having substantially equal dimensions in all directions.

B. Jackson

Jackson describes a sailmaker's palm. As can be seen by the figures and the written description, the Jackson device is a planar device. The purpose of Jackson is to protect a sailmaker's hands from a needle and because of that, the Jackson device is rigid and non-deformable (col 1 lines 26-31). Moreover, the length of the Jackson device is not greater than the width (the planar dimension). For this reason, Applicant submits that the Jackson device is not an elongated device, but rather a device having substantially planar dimension.

C. The Present Claims

In contrast to the references, the pending claims each recite elements not taught or suggested by the references. The figures clearly show that the inventive hand grip is elongated as required in claim 1. In this sense, the specification describes the dimensions of the hand grip.

Any type of resilient material, such as plastic or rubber, can be used for the invention. The range of thickness varies due to the user's hand size and the desired feel of the handle. In one aspect of the invention, the grip 20 is pre-molded to fit user's hand sizes from small to large, and the user can use it immediately after selecting a desired size. For example, the grip thickness (dimension t) can be made as thin as 1mm to greater than 10mm, and the grip can be made to any length that is consistent with human hands. Also, for example, the grip width (dimension w) can be made as narrow as 4mm to wider than 15mm with a preferred range of 6-10mm. (Page 4 line 5 to line 12).

Claim 1 has been amended to define the elongated feature to where the length is at least two times the thickness and the width. The phrase "having a length greater than two times a thickness and greater than two times a width" is intended to mean that the length is greater than two times the thickness and that the length is also greater than two times the width. This recitation is supported by the figures and by the specification.

Neither Frost nor Jackson teach or suggest such a structure. Applicant submits that the pending claims recite at least one feature not taught or suggested by the references. For this

reason, Applicant submits that the pending claims are allowable over the references. Applicant therefore requests that the Examiner reconsider and withdraw the §102 rejections of claims 1-4, 6 and 7.

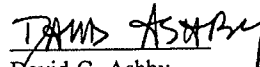
Conclusion

Applicant has amended the claims to overcome the §112 rejections and pointed out features that are not taught or suggested by the references. For these reasons, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of the claims.

If any matters can be resolved by telephone, Applicant requests that the Patent and Trademark Office call the Applicant at the telephone number listed below.

Respectfully submitted,


By:



David C. Ashby
Reg. No. 36,432

FLEHR, HOHBACH, TEST,
ALBRITTON & HERBERT
Four Embarcadero Center; Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 494-8700

Interview Summary	Application No. 08/749,085	Applicant(s) McHugh
	Examiner Paul C. Lewis	Group Art Unit 3408



All participants (applicant, applicant's representative, PTO personnel):

(1) Paul C. Lewis (3) _____

(2) David C. Ashby (4) _____

Date of Interview Aug 12, 1997

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description:

Agreement ☐ was reached. ☒ was not reached.

Claim(s) discussed: 1

Identification of prior art discussed:
Sexton '024

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
Discussed claim language to define the present invention over the Sexton reference. More specifically, language that clarifies how the hand grip is arranged in a wearer's hand with a handle of an implement as well as the fact that the hand grip is resilient may be sufficient to define the claims over the pencil of Sexton. Further, the recitation of the specific dimensions of the hand grip may define the claims over the handle embodiment of Sexton. The Applicant will submit an amendment after final if a decision is made to further limit the claims. The examiner will further consider any claim language presented if an amendment is received.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. ☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph above has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a response to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

2. ☐ Since the Examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the interview unless box 1 above is also checked.

EXHIBIT **11**

Examiner Note: You must sign and stamp this form unless it is an attachment to a signed Office action.

DEC 01 '97 03:18PM FLEHR HOHRACH TEST

P.4/10

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

MCHUGH

Serial No.: 08/749,085

Filed: November 14, 1996

Title: CUSTOMIZABLE HAND GRIP

Art Unit: 3408

Examiner: P. Lewis

TELETYPE RECEIVED

DEC 01 1997

GROUP 3400

PRELIMINARY AMENDMENT

#266
RC
12/10/97

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant petitions that the following Preliminary Amendment be entered in the subject Continuing Prosecution Application (CPA).

IN THE CLAIMS

Please cancel claims 25, 28, 33, 39 and 40.

Please Amend the claims as follows:

1. (Amended) A hand grip configured to fit in a user's hand and for use with a handled instrument, comprising:

an elongated resilient member having an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm and configured to fit at a base of the user's fingers in[to] a gap between a palm of the user's hand [adjacent to a user's superficial transverse metacarpal ligament] and the base of the user's fingers [adjacent to a user's finger to space skin from the user's palm from the user's fingers]; and

A-61195-2/TOH/DCA
Preliminary Amendment

Serial No.08/749,085

DEC 01 '97 03:19PM FLEHR HOHBACH TEST

P.5/10

611 a retainer connected to the member and configured to extend around to the backside of at least one of the user's fingers to retain the member in the user's hand adjacent to the base of the user's fingers.

612 3. (Amended) Δ [The] hand grip as in [of] claim 1, wherein:
the [said] member has a plurality of undulations designed to accommodate the user's fingers and a plurality of protuberances designed to fit between the user's fingers.

3 4. (Amended) Δ [The] hand grip as in [of] claim 1, wherein:
the member has a plurality of undulations designed to accommodate less than four of the user's fingers and at least one protuberance designed to fit between the user's fingers
[said member has undulations designed to accommodate four of the user's fingers].

4 5. (Amended) Δ [The] hand grip as in [of] claim 1, wherein:
the retainer is an elastic strap configured to secure around at least one of the user's fingers
[said member has undulations designed to accommodate less than four of the user's fingers].

613 5d. (Amended) Δ [The] hand grip as in [of] claim 1, wherein [further comprising]:
the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the [said] elongated member in a position adjacent to the base of the user's fingers.

614 21. (Amended) Δ [The] hand grip as in [of] claim 3 [1], wherein [further comprising]:
the retainer is an elastic strap configured to secure around at least one of the user's fingers

DEC 01 '97 03:19PM FLEHR HOHBACH TEST

P.6/10

[a retainer attached to said elongated member and configured to retain said elongated member in a user's hand].

G4 2

22. (Amended) Δ [The] hand grip as in [of] claim ²3, wherein [further comprising]:
~~the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the elongated member in a position adjacent to the base of the user's fingers.~~

[a retainer attached to said elongated member and configured to retain said elongated member in a user's hand].

⁸
 23. (Amended) Δ [The] hand grip as in [of] claim 1, wherein:
 the [said] elongated member is an inflatable member.

⁹
 24. (Amended) Δ [The] hand grip as in [of] claim ⁸23, further comprising:
 a pump coupled to ~~the~~ [said] elongated [inflatable] member; and
~~wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.~~

G5

¹⁰
 25. (Amended) Δ [The] hand grip as in [of] claim ⁵8, wherein:
 the [said] elongated member is an inflatable member.

¹¹
 27. (Amended) Δ [The] hand grip as in [of] claim ¹⁰26, further comprising:
 a pump coupled to ~~the~~ [said] elongated [inflatable] member; and
~~wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.~~

DEC 01 '97 03:19PM FLEHR HOHBACH TEST

P.7/10

376 29. (Amended) A [The] hand grip as in [of] claim 1, wherein:
 the [said] elongated member includes a plurality of sub-members each configured to fit adjacent to the base of the user's [superficial transverse metacarpal ligament and adjacent to a user's] fingers.

13 30. (Amended) A [The] hand grip as in [of] claim 29, wherein [further comprising]:
 the retainer is a glove configured to secure around the user's fingers and including an attachment to retain the [said] elongated member [sub-members] in a position adjacent to the base of the user's fingers.

14 31. (Amended) A [The] hand grip as in [of] claim 30, wherein:
 the elongated member is an [said sub-members are] inflatable member[s].

15 32. (Amended) A [The] hand grip as in [of] claim 31, further comprising:
 a pump coupled to the [said] elongated [inflatable] member[s]; and
wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

Please add the following new claims:

But 41. An apparatus for use by a human hand to grip an object, the hand having a palm and a plurality of fingers with respective bases secured to the palm, comprising a thin elongated member made from a flexible material, the elongated member having a length sufficient to extend across the base of the fingers adjacent the palm and a plurality of longitudinally spaced-apart protuberances adapted to extend between the fingers, a curved surface extending between adjacent protuberances for forming a recess to receive the base of a finger and a retainer extending around to the backside of at least one of the fingers for removably securing the elongated member to the hand.

A-61195-2/TOH/DCA
 Preliminary Amendment

Serial No.08/749,085

DEC 01 '97 03:20PM FLEHR HOHBACH TEST

P.8/10

17
42. An apparatus as in Claim 41 wherein the retainer for removably securing includes an elastic band having first and second ends secured to the elongated member.

18
43. An apparatus as in Claim 41 wherein the retainer for removably securing includes a T-shaped retainer having a part thereof secured to the elongated member.

19
44. An apparatus as in Claim 41 wherein the elongated member has a plurality of at least three longitudinally spaced-apart protuberances.

20
45. An apparatus as in claim 41 wherein the elongated member has an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm.

21
46. An apparatus as in claim 42 wherein the elongated member has an average width of approximately 4-15 mm and an average thickness of approximately 1-10 mm.

22
47. An apparatus as in claim 41 wherein the retainer for removably securing includes a glove including an attachment to retain the elongated member in a position adjacent to the user's fingers.

23
48. An apparatus as in claim 41 wherein the elongated member is an inflatable member.

24
49. An apparatus as in claim 48 further comprising a pump coupled to the elongated member and wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

25
50. An apparatus as in claim 47 wherein the elongated member is an inflatable member.

DEC 01 '97 03:20PM FLEHR HOHBACH TEST

P. 9/10

²⁶
²⁵
 51. An apparatus as in claim 50 further comprising a pump coupled to the elongated member and wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

⁵²
 52. An apparatus as in claim 41 wherein the elongated member includes a plurality of sub-members each configured to fit adjacent to one of the user's fingers.

⁵³
 53. An apparatus as in claim 47 wherein the elongated member includes a plurality of sub-members each configured to fit adjacent to one of the user's fingers.

⁵⁴
 54. An apparatus as in claim 51 wherein the elongated member is an inflatable member.

⁵⁵
 55. An apparatus as in claim 53 further comprising a pump coupled to the elongated member and wherein the elongated member is responsive to the pump and is configured to inflate upon activation of the pump.

REMARKS

This Preliminary Amendment is submitted with a CPA in order to define over the references. Applicant has amended claim 1 to include "a retainer connected to the member and configured to extend around to the backside of at least one of the user's fingers to retain the member in the user's hand adjacent to the base of the user's fingers." Independent claim 41 has a similar limitation. No reference teaches or suggests this limitation. For this reason, Applicant petitions for allowance of the claims.

DEC 01 '97 03:21PM FLEHR HOHBACH TEST

P.10/10

If there are any matters that can be resolved with a telephone call. Applicant requests that the Examiner call the Applicant at the telephone number below.

Respectfully submitted,

By:

DAVID ASHBY
David C. Ashby
Reg. No. 36,432

FLEHR HOHBACH TEST
ALBRITTON & HERBERT LLP
Four Embarcadero Center; Suite 3400
San Francisco, CA 94111-4187
Telephone: (650) 494-8700

FAX COPY RECEIVED

DEC 01 1997

GROUP 3400

A-61195-2/TOH/DCA
Preliminary Amendment

Serial No.08/749,085



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of)
James M. Kleinert)
Serial No. 09/867,084) Examiner: Lindsey, R.
Filed: 05/29/01) Unit No. 3765
FOR: BATTING GLOVE)

AFFIDAVIT UNDER RULE 132

COMMONWEALTH OF KENTUCKY)
COUNTY OF JEFFERSON) SS:

James M. Kleinert, being duly sworn, deposes and says that:

1. He is the inventor of the subject matter claimed in the above-identified patent application;
2. He resides at 3422 Glenview Avenue, Louisville, Kentucky 40222;
3. He did receive the Bachelor of Science degree in Medical Science from the University of Louisville with high honors in 1976;
4. He did receive the Medical Doctorate from the Vanderbilt University School of Medicine in 1979;
5. He did general surgery intern at the University of Cincinnati Medical School in Cincinnati, Ohio in 1979-1980;
6. He was the chief orthopaedic resident at the University of Cincinnati University Hospital and Childrens Hospital Medical Center from 1980-1984;

EXHIBIT 13

7. He had a fellowship to the Raymond M. Curtis Hand Center, the Union Memorial Hospital, Baltimore, Maryland in 1984-1985;

8. His experience includes teaching appointments in orthopaedic surgery at the University of Louisville from 1985 to the present where he is an associate clinical professor of orthopaedic surgery;

9. He has been a member of the American Board of Orthopaedic Surgery since July 1987;

10. He is on the hospital staff at Jewish Hospital, Louisville, Kentucky and the University of Louisville Hospital in Louisville, Kentucky;

11. His professional experience also includes a partner in Kleinert, Kutz and Associates Hand Care Center from July 1985 to August 1997;

12. His experience also includes his involvement in hand research since September 1997 to the present.

13. He has also been a member of a number of professional organizations relating to orthopaedic surgery, particularly in relation to the hand which includes a fellow of American Academy of Orthopaedic Surgeons; the American Society of Surgery of the Hand; the American Foundation for Surgery of the Hand; and, the Orthopaedic Research and Education Foundation;

14. His professional experience also includes being a consultant reviewer for the Journal of Bone and Joint Surgery; Journal of Hand Surgery; Journal of Reconstructive Micro Surgery; and, Journal of Microsurgery.

15. He has also received a number of awards in relation to his experience and involvement in hand surgery and has been the author or co-author of at least 35 publications in regards to orthopaedic surgery and particularly hand surgery;

16. He is familiar with the Office Action mailed October 15, 2001, identified as paper No. 7 wherein all of the claims of the subject application stand rejected as unpatentable over Rawlings, Rawlings in view of Webster, Rawlings in view of Eibert, Rawlings in view of Redwood et al, and Rawlings in view of Bourdeau et al;

17. Upon his review of the Rawlings reference, the primary reference of the instant application upon which the Examiner relies as allegedly teaching that the padding of the baseball glove does not cover the metacarpalphalangeal joint of the index finger, Affiant submits this is incorrect. Affiant submits that the major discrepancy between the teachings of Rawlings and the instant claimed invention, which has to do with the common misconception of where the metacarpalphalangeal joints (MCP), referred to hereinafter as the MCP joints (knuckles), is the actual location of these MCP joints in the hand. Affiant submits that even physicians still often believe that the knuckles on the palm side of the hand are located at the creases at the base of the fingers, as shown in Fig. 5 of the Rawlings patent, and identified as the joint 4. Affiant submits the joints are not located at this position at all. MCP joints, or knuckles, on the palm side of the hand are located at a significant distance,

about 3/4", below the crease at the base of the finger and at a significant distance above, again about 3/4", the major crease that runs horizontally across the palm. Fig. 5 in the Rawlings patent shows a pad identified by the numeral 2 being placed precisely between these creases and this pad completely covers the MCP joints (knuckles). An overlay of this pad, identified by the numeral 2, is shown in Exhibit A attached hereto which is a copy of a skeletal of the human hand. In Fig. 1 of the present application, Affiant submits there should be no pad at all where pad 2 of Rawlings is located. In complete contrast to the teachings of Rawlings Affiant submits that there should be a completely pad free zone as this would correctly allow complete freedom of movement of the MCP joints (knuckles). Affiant submits that in his claimed invention there should be no pad at all along the center axis of rotation of the MCP joint which is between the areas identified by numerals 3 and 4 as shown in Fig. 5 of Rawlings. Affiant submits that Rawlings in fact has unfortunately and incorrectly described 3 and 4 as being joints, but in reality, areas identified by numerals 3 and 4 identify "creases" not "joints". There is only one joint for each finger in this location of the hand and it is directly below the middle of the Rawlings pad identified by the numeral 2. In other words, the actual location of the MCP joints (knuckles) as viewed from the palm side of the hand is exactly midway between the numbers 3 and 4 of Fig. 5 of Rawlings. Affiant submits the finger creases are misleading, and unfortunately, have been utilized in the

prior art to illustrate where pads should be located. Affiant submits that this is very significant and critical when designing pads and placing them on the palm side of a glove.

FURTHER AFFIANT SAYETH NOT:


JAMES M. KLEINERT

10 SUBSCRIBED AND SWORN to before me by JAMES M. KLEINERT this day of December, 2001.

My commission expires: 4/7/2004


NOTARY PUBLIC, STATE AT LARGE, KY